

Remarks

I. Introduction

Claims 1-133 remain pending in this application. By this amendment, claims 1, 17, 36, 44, 55, 62, 78, 97, 105 and 116 are amended. Reconsideration in view of the foregoing amendments and following remarks is respectfully requested.

Applicants appreciate the Examiner's indication that claims 30-35 and 91-95 are allowed. For the reasons set forth herein, Applicants submit that all pending claims are in condition for allowance.

II. Clarifications

At the outset, Applicants note the Office Action indicates that claim 96 is rejected. However, claim 96 is dependent upon claim 91, which was indicated as allowed by the Office Action. There being no other stated reasons for rejection of claim 96, it appears that this was a typographical error and that claim 96 is actually allowed.

The Office Action indicates that claims 123-133, including independent claims 123, 125, 127 and 133, are rejected. However, nowhere in the body of the Office Action are rejections provided for these claims. Therefore, because these claims are not specifically addressed by the Office Action, because independent claims 123, 125, 127 and 133 were amended in the March 5, 2004 Amendment, and because the previous rejection of these claims (add other claims) under 35 U.S.C. § 112, 1st paragraph appears to have been withdrawn, it appears that these claims should stand allowed.

Applicants respectfully request confirmation of these points of clarification.

Applicants wish to bring to the Examiner's attention an error in Applicants' March 5, 2004 Response. In that Response, claim 133 was inadvertently truncated at page 21. Claim 133 as it appears in this paper accurately recites the entirety of the claim as previously amended.

III. Informal Matters

By this amendment, claim 105 has been amended in part to remove redundant claim language inadvertently included when this claim was added by an earlier amendment. Also by this amendment, claims 55 and 116 have been amended in part to correct two minor errors discovered while preparing this response.

III. Rejection under 35 U.S.C. § 112, 2nd Paragraph

Claims 1-29, 36-90 and 96-122 stand rejected under 35 U.S.C. § 112, 2nd paragraph as being indefinite. Specifically, the Examiner alleges that it is unclear what reducing an average DC signal component refers to in the claims. Applicants traverse the rejection.

As noted above, Applicants presume that the inclusion of claim 96 in the rejection was inadvertent and further that this claim is actually allowed.

Regarding independent claims 1, 17, 36, 44, 55, 62, 78, 97, 105 and 116, Applicants respectfully submit that these claims are in fact definite. In the Office Action dated September 5, 2003, rejections of the claims were made on the grounds of indefiniteness as well under § 112, 1st paragraph. As a result, on February 24, an interview was conducted with the Examiner, inventor Carl Andren, and two of applicants' representatives including the undersigned. During that interview, the inventor how the DC signal component is reduced by the modified Walsh code. Proposed amendments were discussed and claims 17, 44, 78, 123, 125, 127, 132 and 133 were amended consistent with what was agreed upon during the interview resulting in

withdrawal of the rejections. At the interview, the Examiner agreed that based the rejection under § 112, 2nd paragraph would be withdrawn. The Examiner's position with respect to the 112, 2nd rejection is memorialized in the Interview Summary form (a copy of which is included with this response as Exhibit A), which states in relevant portion: 1) the 112, 1st and 2nd paragraph rejections were discussed; 2) that agreement was reached; and 3) that the Examiner agreed to withdraw the 112 rejections after the explanation and a proposed amendment. As discussed above, the proposed amendment referred to the claims that were actually amended in the March 5, 2004 response.

Based on the February 24 interview, Applicants expected that all rejections under § 112, 2nd paragraph would be withdrawn. Accordingly, Applicants are uncertain whether the present rejection has been maintained out of error or if in fact, the Examiner has changed his position with regard to the § 112, 2nd paragraph rejection since the February 24, 2004 interview.

In either event, to expedite the prosecution of this application, Applicants have amended each of independent claims 1, 17, 36, 44, 55, 62, 78, 97, 105 and 116 to emphasize the meaning of the claim term "reducing an average DC signal component." Applicants believe that as previously submitted these claims satisfy all formal requirements and further that it is clear that this term refers to the information that is being acted on, i.e., decoded or encoded, by the correlator/encoder. Therefore, each of these claims have been amended to recite "reducing an average DC signal component of the [decoded/encoded] signal" to even more directly state what is already expressed in a more subtle manner. Accordingly, it is clear that with reference to claim 1, the information is decoded according to a modified Walsh code thereby reducing an average DC signal component of the decoded information. Therefore, it is clear that the average DC signal component is reduced relative to its pre-decoded state.

Looking at claim 1, for example, claim 1 recites, *inter alia*, “a demodulator for spread spectrum phase shift keying (PSK) demodulating information received from said radio circuit,...said demodulator comprising at least one modified Walsh code function correlator for decoding information according to a modified Walsh code reducing an average DC signal component of the decoded information which in combination with the AC-coupling to said at least one A/D converter enhances overall performance...” Thus, it is clear that the modified Walsh code function correlator of the demodulator decodes the information that is received at the demodulator from the radio circuit according to a modified Walsh code that reduces an average DC signal component of that decoded information. Applicants respectfully submit that to the extent the Examiner’s 112, 2nd paragraph rejections were maintained in error the proposed amendment does not alter the scope or meaning of the claim terms and merely emphasizes what was already expressly recited.

Although not rejected, claims 55 and 116 have also been amended to correct errors previously introduced. Specifically, both claims refer to “for baseband processor” in the preamble that was inadvertently included and is hereby deleted. Both claims more appropriately, as amended, recite “A method for spread spectrum radio communications” in the preamble.

Therefore, in view of the foregoing, Applicants respectfully submit that all formal matters have been satisfied. Accordingly, Applicants respectfully request that rejection of independent claims 1, 17, 36, 44, 55, 62, 78, 97, 105 and 116, as well as the rejection of dependent claims 2-16, 18-29, 37-43, 45-54, 56-61, 63-77, 78-90, 98-104, 106-115 and 117-122 be withdrawn.

IV. Rejection under 35 U.S.C. § 103(a)

Claims 36, 41, 43, 44, 53-55, 61, 97, 102, 104, 105, 114-116, 122 and 123 under 35 were rejected U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6, 567,389 (hereinafter the ‘389

patent) to Honkasalo et al., in view of U.S. Patent No. 4,813,001 (hereafter the '001 patent) to Sloane. Applicants respectfully traverse the rejection.

Of the claims rejected under § 103(a), claims 36, 44, 55, 97, 105 and 116 are independent. Therefore, dependent claims 41, 43, 53, 54, 61, 102, 104, 114, 115 and 122 will be presumed to be patentable for at least the same reasons as their respective independent claims.

For sake of clarity, the rejection of the independent claims are herein traversed in the order in which they appear in the Office Action. However, at the outset, Applicants note that although claim 123 was commonly rejected on the same grounds as claims 36 and 97, this appears to be an error because claim 123 has substantially different claim features than claims 36 and 97 and was not previously rejected over Honkasalo as it was applied in the § 102(b) rejection of the September 5, 2003 Office Action.

Regarding independent claims 36, 44, 97 and 105, Applicants respectfully submit that the combination of applied references fails to disclose or even suggest a modulator for a spread spectrum radio transceiver, comprising modulator means for spread spectrum phase shift keying (PSK) modulating information for transmission, said modulator means comprising at least one predetermined orthogonal code function encoder for encoding information according to a predetermined orthogonal code for reducing an average DC signal component of the encoded information, as recited in claims 36 and 97 and similarly recited in claims 44 and 105.

Regarding independent claims 55 and 116 Applicant's respectfully submit that the combination of applied references fails to disclose or even suggest a method for spread spectrum radio communication, comprising the steps of spread spectrum phase shift keying (PSK) modulating information for transmission while encoding information according to a predetermined orthogonal code for reducing an average DC signal component of the encoded

information, and spread spectrum PSK demodulating received information by decoding the received information according to the predetermined orthogonal code, as recited in claims 55 and 116.

The '389 patent purports to teach a method for improving data transmission over the radio path between a mobile station and a base station in a cellular communications system where Walsh codes are used to facilitate channel separation – that is to prevent correlation between the multiple simultaneous signals operating on the various channels. Walsh codes in the system of the '389 patent are modified by deleting the last bit. Furthermore, a base signal is divided into a plurality of slower speed parallel data signals DATA1 - DATAN. Walsh coding is performed on each of the individual parallel lower speed signals. Unlike in the claims of the instant application, nowhere does the '389 patent discuss how to obtain or any benefit in obtaining a resulting reduction in an average DC signal component of the information signal.

In the Office Action the Examiner recognizes that the '389 patent does not teach a Walsh code modified to have an offset for reducing a DC signal component and relies upon the '001 patent for this feature. However, the '001 patent is directed to a method for determining the transfer function of a data acquisition system and discusses how that is how the electronic components of a data acquisition system, such as, for example, an oscilloscope, effect the frequency response for a given input signal. While the '001 patent does mention at col. 7, lines 57-62 that if offset Walsh patterns as used, the DC term may be removed (or reduced) before application of the FFT (fast Fourier transform) algorithm, it does not do so in the context of reducing an average DC component of a demodulated signal. In fact, the '001 makes no mention of modulation at all.

Therefore, based on the deficiencies of the '389 patent and the '001 patent, Applicants respectfully submit that the combination of the '389 patent with the '001 patent fails to teach or even suggest the invention as claimed. Moreover, Applicants submit that the combination of references as applied is based on improper hindsight reconstruction based on Applicants own disclosure. The '389 patent purports to teach using a modified Walsh code to assist with traffic channel separation. Assuming arguendo that the '001 patent teaches using a modified Walsh code to reduce a DC signal component, combining this feature with the '389 patent is not an additive combination in that it does not supplement what is already disclosed in the '389 patent, but rather would replace the '389 patent's use of Walsh coding. There is nothing in the '389 patent or the '001 patent that would make such a replacement of functionality intuitive other than what was disclosed in Applicants' disclosure.

Therefore, because the combination of applied references fails to render obvious the claims of the instant application, and because the combination itself is improper in that the combination requires replacing the '389 patent's use of Walsh coding with the non-analogous use of Walsh coding in the '001 patent, independent claims 36, 44, 55, 97, 105 and 116 are patentable over the combination of applied references. Accordingly, Applicants' respectfully request that the rejection of the claims under 35 U.S.C. § 103(a) be withdrawn.

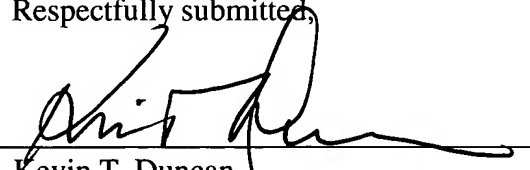
V. Conclusion

Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of all pending claims 1-133 are earnestly solicited. Should the Examiner believe that anything further would be desirable in order to place the claims in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

Dated: November 9, 2004

By: _____


Kevin T. Duncan
Registration No. 41,495

HUNTON & WILLIAMS
Intellectual Property Department
1900 K Street, N.W., Suite 1200
Washington, D.C. 20006-1109
(202) 955-1500 (Telephone)
(202) 778-2201 (Facsimile)

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